

Land Acquisition Fact Sheet

FS98.01, July 1999



1. Description of Watershed Activity:

Over the past twelve years, Metropolitan District Commission/Division of Watershed Management has conducted a watershed land acquisition program *“to protect sensitive watershed land from urbanization and to restore and maintain stable forest cover on this land.”* Therefore, the chief value of this program is to help maintain high water quality into the future. DWM has by far the largest and most aggressive land acquisition program of all U.S. water suppliers and has acquired significant acreage using sophisticated computer models to identify sensitive watershed land.

2. Threat or Pollutant(s)-of-Concern:

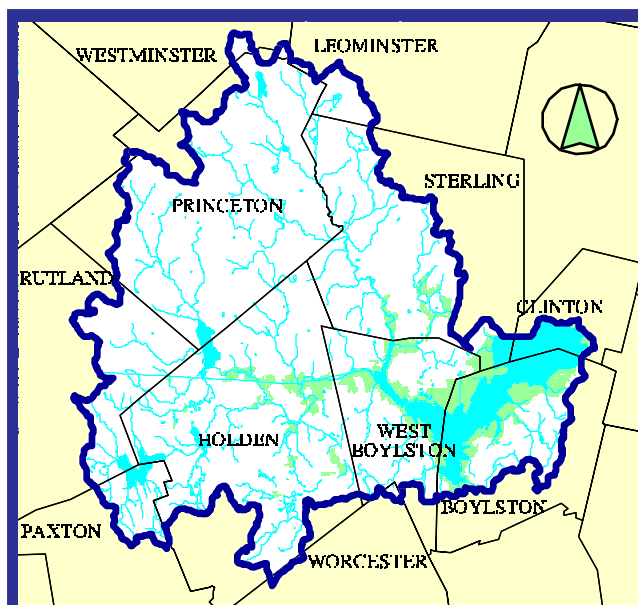
Land acquisition protects undeveloped land from urbanization. The pollutants that are associated with urbanization include: bacteria, pathogens, nutrients, sediments, heavy metals, and other pollutants associated with increased stormwater runoff.

3. Control Strategy:

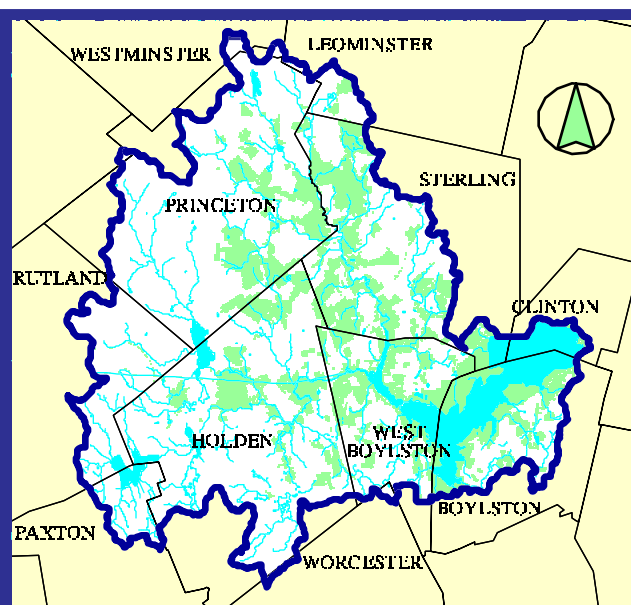
DWM has developed a comprehensive computer model for the Wachusett watershed which scores the sensitivity (watershed index) of all land using twelve weighted criteria and three basin overlay multipliers. The watershed index, calculated by the computer model, indicates areas that are rich in water resources and sensitive to degradation. Spending on land acquisition has exceeded recommendations set in 1991 (see Table 1). Since the program began in 1985, DWM has increased the percentage of agency land at the Wachusett watershed from 7.9 to 22 (see Table 2). With the reservoir surface area included, the percentage of DWM owned land area is 26.8% (15,920 acres of land and 4,170 acres of reservoir area).

4. Current Status of the Control Program:

DWM has met or exceeded the recommendations of the 1991 Watershed Protection Plans (WPP) in the following areas:



MDC Land - Wachusett Watershed, 1985



MDC Land - Wachusett Watershed, 1999

- exceeded the amount to be spent on land acquisition on the three watersheds by \$18 million.
- exceeded the requirements for the use of computer mapping in the land acquisition program to identify sensitive watershed areas.
- increased Other Protected Open Space land from 8.0% to 19% on the three watersheds, even though the WPP's did not require any increase in this category (see Table 3).
- exceeded the recommendations for both the Total Protected Open Space land in the three watersheds and for the Wachusett Reservoir Watershed, where the percentage of land in this category increased from 21% to 53% since 1991 (see Figure 1).
- exceeded the recommendations for DWM land acquisition at the Quabbin Reservoir watershed (see Table 1).
- exceeded recommended program staffing.

Land acquisition progress at Wachusett is ahead of the schedule set in the 1992 Executive Summary of the WPPs. For example, in 7 years of the 15 year schedule (47% of the time), MDC has completed 83% of the acquisition recommended in the 1991 WPP for Wachusett watershed.

In April, 1997, DWM drafted a plan to spend 22 million dollars before August, 1998 to acquire an additional 2,500 acres in the Wachusett watershed. By September, 1999, 24 million dollars have been spent to acquire 2,904. This acquisition brings DWM ownership (including land area and reservoir surface) to 26.8% of the watershed.

5. Other Current Actions Taken:

• **Care and Control Agreements:** The MDC/DWM and the Department of Environmental Management (DEM) recently signed a joint care and control agreement, placing 6,100 acres of DEM state forest land

under special watershed protection status. Of the total acreage, 2,100 acres are within the boundaries of the Wachusett watershed, 2,300 acres are located in the Quabbin watershed, and 1,700 acres are on the Ware River watershed.

• **Conservation Restrictions:** DWM has initiated negotiations of conservation restrictions (CR) with the largest, non-state Other Protected Open Space owners in the three watersheds. These holdings include 10,500 acres of land (nearly 5% of the three DWM watersheds) and are currently preserved for conservation or water supply purposes.

6. Actions to be Taken by July, 2009:

• **Land Acquisition:** Beyond August, 1998, DWM will continue to be required by state law to spend 8 million dollars per year on land acquisition on its three active watersheds. This annual expenditure will continue until the 94 million dollars remaining in the bond after August, 1998 are spent. This will occur in 2009.

DWM will utilize a computer model for Wachusett watershed and one for the Ware River was developed in 1998 by the University of Massachusetts in order to select parcels within these two watersheds. In the Quabbin watershed, DWM owns considerably more land than in its other two watersheds. Therefore, parcel selection there will consist of identifying the remaining unprotected stretches of tributaries.



Mount Pomeroy, Quabbin Reservoir

Using the analysis from the computer models and staff expertise, DWM will allocate the remaining 94 million dollars of land acquisition funds among the three watersheds. The highest priority will remain the Wachusett watershed, the closest reservoir to consumers and with the least percentage of sensitive watershed land protected. The second priority will be the remaining stream frontage which drains directly into the Quabbin Reservoir.

Land acquisition allocation scenario for the remaining 94 million dollars:

Wachusett Watershed.....	69 million
Ware River Watershed.....	21 million
Quabbin Watershed.....	4 million

The third priority will be the Ware River watershed and hydrologically remote sections of the Quabbin watershed. This allocation would allow DWM to protect about two thirds of the sensitive watershed resources at Wachusett, as measured by the computer model. The allocation at Ware River would allow for approximately 3,300 additional acres to be protected, bringing the total protected open space to 60% of the watershed. The allocation for Quabbin would protect approximately 2,500 additional acres, which would include the remaining unprotected stream frontage that drains directly to the reservoir. The actual allocation implemented by MDC will depend on the analysis utilizing the Wachusett and Ware River computer models and staff expertise.

Table 1: Recommended Acquisitions in 1991 Watershed Protection Plans for Wachusett, Ware River, and Quabbin Watersheds (MDC/MWRA, 1991) and Actual Acres Acquired by MDC.

Watershed	Acres recommended for purchase by 1991 plans	Estimated cost (millions of dollars)	Acres purchased by MDC (1991-9)	Actual Cost (millions of dollars)
Wachusett	10,500	46.2	10,340	55.5
Ware River	8,097	13.6	3,031	11.4
Quabbin	1,020	1.6	1,343	3.4
Total	19,617	61.4	14,714	81.8

Table 2: MDC Land Holdings by Watershed in 1985 and 1999¹

Watershed	Acres (1985)	Percent of Watershed (1985)	Acres (1999)	Percent of Watershed (1999)	Total Watershed
Wachusett	5,608	7.9	15,940	22.5	70,934
Ware River	19,300	31.3	22,838	37.0	61,739
Quabbin	51,792	54.3	54,203	56.8	95,411
Total	76,700	33.6	91,981	40.8	228,084

¹ Figures from MDC GIS and other sources. Watershed totals do not include reservoir surfaces. MDC land outside of watershed boundaries is not included. Figures are current to date of report.

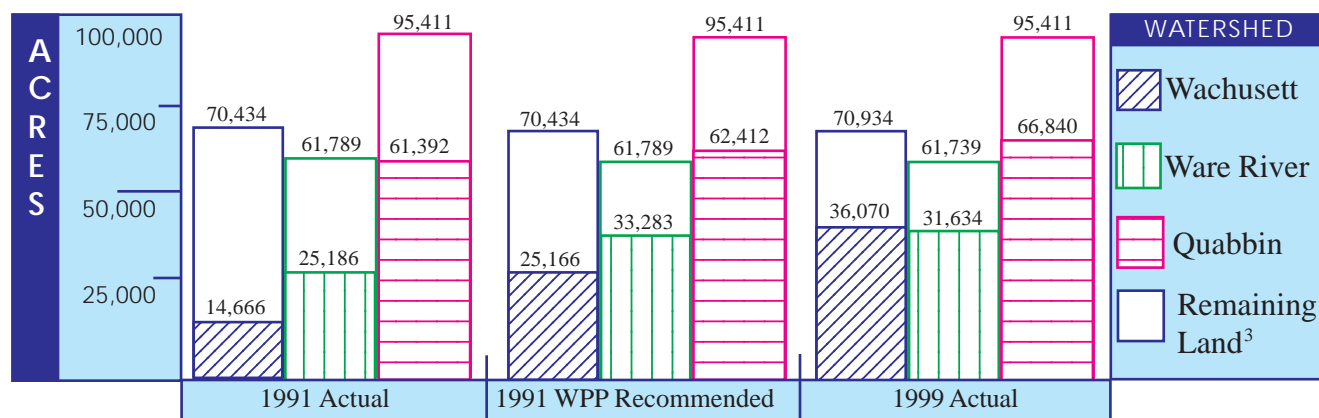


Table 3: Other Protected Open Space Land by Watershed in 1991 and 1999.¹

Watershed	Acres (1991)	Percent of Watershed (1991)	Acres (1999)	Percent of Watershed (1999)	Total Watershed
Wachusett	7,500	10.6	21,870	30.8	70,934
Ware River	3,200	5.2	8,796	14.2	61,739
Quabbin	8,674	9.1	12,637	13.2	95,411
Total	19,374	8.0	43,303	19.0	228,084

¹ 1991 figures are from WPP and 1997 figures are from MDC GIS. Watershed totals do not include reservoir surfaces. 1997 figures include the same categories as in the 1991 WPP with the exception of Chapter 61 land in Quabbin and Ware River watersheds (updated figures not yet available) and with the addition of the 200 foot "no build" zone protected by the Watershed Protection Act of 1992. Figures are current to date of report.

Figure 1: Total Protected Open Space Land in 1991, Recommended in the 1991 WPP's and in 1998.²



² Total Protected Open Space Land includes "MDC Land" (Table 2) and "Other Protected Open Space Land" (Table 3).

³ Figures shown are total watershed acreage excluding reservoir surface.

Table 4: Comparison of Land and Watershed Index Protected in the Wachusett Watershed.⁴

1999 % of Watershed in MDC Land	1999 % of Watershed index protected by MDC	1999 % of Watershed in non-MDC Open Space	1999 % of Watershed Index Protected by non-MDC Open Space	Possible Future MDC % of Watershed	Possible Future MDC % of Watershed Index Protected
22.4%	32.0%	27.7%	25.4% **	30.0%	70.0%

* % of watershed does not include Wachusett Reservoir.

** Includes 2,100 acres in the MDC/DEM care and control agreement.

For More information (Reference Number FS99.01) Contact:

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Metropolitan District Commission/Division of Watershed Management

20 Somerset Street

Boston, Mass. 02108

or visit us at: <http://www.state.ma.us/mdc>

Tel: (617) 727-5274 ex 270

Fax: (617) 727-8301